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pub-date > 1993 and TITLE-ABSTR-KEY(infiniband)

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1. ☐ **First experience with the InfiniBand interconnect** • ARTICLE
Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, In Press, Uncorrected Proof, Available online 2 August 2004,
Ulrich Schwickerath and Andreas Heiss
SummaryPlus | Full Text + Links | PDF (487 K)

A test cluster of dual Intel–Xeon processor server nodes has been equipped with 10 GBit/s InfiniBand interconnect. Capabilities of this new technique were tested and compared to Gigabit-Ethernet (GE) with respect to both High-Performance Computing (MPI-based parallel computing applications) and High-Throughput Computing (HTC). RFIO, a protocol for fast and efficient file transfers, has been ported to make immediate use of InfiniBand, utilizing the remote direct memory access (RDMA) capabilities of the InfiniBand hardware. The performance is compared to Gigabit-Ethernet.

2. ☐ **Processor-embedded distributed smart disks for I/O-intensive workloads: architectures, performance models and evaluation** • ARTICLE
Journal of Parallel and Distributed Computing, Volume 64, Issue 3, March 2004, Pages 427-446
Steve C. Chiu , Wei-keng Liao , Alok N. Choudhary and Mahmut T. Kandemir
Abstract

Processor-embedded disks, or smart disks, with their network interface controller, can in effect be viewed as processing elements with on-disk memory and secondary storage. The data sizes and access patterns of today's large I/O-intensive workloads require architectures whose processing power scales with increased storage capacity. To address this concern, we propose and evaluate disk-based distributed smart storage architectures. Based on analytically derived performance models, our evaluation with representative workloads show that offloading processing and performing point-to-point data communication improve performance over centralized architectures. Our results also demonstrate that distributed smart disk systems exhibit desirable scalability and can efficiently handle I/O-intensive workloads, such as commercial decision support database (TPC-H) queries, association rules mining, data clustering, and two-dimensional fast Fourier transform, among others.

3. ☐ **Supporting adaptive routing in IBA switches** • ARTICLE
Journal of Systems Architecture, Volume 49, Issues 10-11, November 2003, Pages 441-456

J. C. Martínez, J. Flich, A. Robles, P. López and J. Duato
SummaryPlus | Full Text + Links | PDF (407 K)

InfiniBand is a new standard for communication between processing nodes and I/O devices as well as for interprocessor communication. The InfiniBand Architecture (IBA) supports distributed deterministic routing because forwarding tables store a single output port per destination ID. This prevents packets from using alternative paths when the requested output port is busy. Despite the fact that alternative paths could be selected at the source node to reach the same destination node, this is not effective enough to improve network performance. However, using adaptive routing could help to circumvent the congested areas in the network, leading to an increment in performance.

In this paper, we propose a simple strategy to implement forwarding tables for IBA switches that supports adaptive routing while still maintaining compatibility with the IBA specs. Adaptive routing can be individually enabled or disabled for each packet at the source node. The proposed strategy enables the use in IBA of any adaptive routing algorithm with an acyclic channel dependence graph. In this paper, we have taken advantage of the partial adaptivity provided by the well-known up*/down* routing algorithm. Evaluation results show that extending IBA switch capabilities with adaptive routing may noticeably increase network performance. In particular, network throughput improvement can be, on average, as high as 66%.

4. ☐ **A distributed, hardware reconfigurable and packet switched real-time control and data acquisition system** • ARTICLE
Fusion Engineering and Design, Volume 60, Issue 3, June 2002, Pages 443-448
A. J. N. Batista, A. Combo, J. Sousa and C. A. F. Varandas
Abstract

The architecture of a synchronized event-based control and data acquisition system that aims to improve significantly the performance of actual systems is presented. The design explores recent developments in data transport, signal processing and system synchronization. Data transport between the acquisition, processing and storing devices and at backplane level will be performed by InfiniBand, a low latency packet switched network standard. Data processing algorithms will be performed in a mixture of digital signal processors and reconfigurable field programmable gate arrays. Both devices will be programmed from a descriptive high-level mathematical language. Acquisition synchronization, data stamping and event management will be performed through a specialized low latency synchronous optical network for the time critical signals.

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Jul 2002
...4-6 4.4 **Subnet** Queries...Subscription **Services**...Management
Agent...User-Mode **Services**...Access Layer **Data** Flow...6-1 7. **Data**
Structures...Figure 54. **Subnet** Queries **Services**...
more hits from [http://infiniband.sourceforge.net/IAL/Access/IBA_AL_HL...]
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☐ **2.** **Vol1.book**
Apr 2002
...67 3.4.5.2 **Subnet** Management...68 3.4.5.3 **General** Service Agents...69
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Services...40 41 42 **InfiniBandTM** Architecture...VOLUME 1 - **GENERAL**
SPECIFICATIONS...Chapter 5: **Data** Packet Format...
more hits from [http://www.cs.uni-
potsdam.de/~schnor/potsdam/Teaching/...]
similar results

☐ **3.** **No Title**
Nov 2001
...immediate **data** field of...notifications in **InfiniBand** have to
go...Completion **Queue**. These requirements...to have a **subnet**
management **agent**[3]. It also defines a **general** service interface...above
that **InfiniBand** implementations...a host of **services** to
Consumers...support the **InfiniBand** transport **services**. Hence,
the...modifying **queue pairs**, posting...
more hits from [http://www.ece.northwestern.edu/~schiu/sd/tr03-01-ib-e...]
similar results

☐ **4.** **The Chapter Title Version A**
Jan 2002
...differential **pairs**, 12 per direction...24 fibers **General**
Description...Generator for **InfiniBand** API Reference...into the **data**
stream. Running...Generator for **InfiniBand** API Reference...Link Layer
Services provided...within the **InfiniBand** network...transceiver **queue** to
one of...E2953A into a **data** sink. You...
[http://ftp.agilent.com/pub/callpub/ddt/infnibnd/E2953A...]
similar results

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Jul 2002
...545 Arjan van de Ven MetaNet: **Message**-Passing Network Daemons
556...examine a solution that enhances **data** cache effectiveness and
therefore...line bouncing prob- lem can be **generally** addressed by improv-
ing the **data** memory references and instruction...
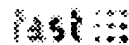[http://linuxkernel.sourceforge.net/DraftMaster5.pdf]

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6. 01-028r6 SRP InfiniBand annex
   Jun 2001
   ...management **services** other than **subnet** manage- ment...well-known
   queue pair 1. See **InfiniBandTM** Architecture Volume 1 **General**
   Specifications...Volume 1 **General** Specifications...1.0. A.4 **InfiniBand**
   Architecture...ports and **queue pairs** (QPs) (see...contains **queue pairs,**
   channel adapters, **InfiniBand** ports, and...over the **general** service
   interface...
   more hits from [http://www.t10.org/ftp/t10/document.01/01-028r6.pdf]
   similar results

7. No Title
   Nov 2002
   ...based on **general** purpose network...programming- **services** are
   requested...implementations "no **message** passing...for high **data** rate
   communication...for high **data** rate communications...represent **general-**
   purpose systems...level) for **message** passing and...the kernel **agent** which
   passes...application moves **data** into a buffer...descriptor for the **message**
   to be sent...internal **queue** inside the...
   more hits from [http://www.csis.ul.ie/Modules/CS4838/lectures/pdf/lect...]
   similar results

8. 01-328r8 SRP LB Res
   May 2004
   It should be available at ftp://ftp.t10.org/t10/drafts/srp/srp-r16.pdf
   Comments with possible implementation effects (list may be incomplete):
   HP09: Security Protocol . . . .
   Rejected HP27: Identifer construction rules . . . .
   more hits from [http://www.ncits.org/Archive/2002/it021061/01-
   328r8.pd...]
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9. EE Times -OS designers rethink I/O models
   May 2004
   ...includes **queue pairs** (QPs), completion...notifying the **Infiniband**
   transport...CA for its **services**. That is...management **Infiniband** specifies
   two special **queue pairs**: QP0, from which all the **subnet**
   management...which is the **general services** QP where...managed. The
   agent that manages...termed the **subnet** management...termed the
   general-services QP, which...widely used **agent** in **Infiniband**
   architecture...
   [http://www.eetimes.com/story/OEG20010420S0056]
   similar results

10. No Title
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    ...545 Arjan van de Ven MetaNet: **Message**-Passing Network Daemons
    556...examine a solution that enhances **data** cache effectiveness and
    therefore...line bouncing prob- lem can be **generally** addressed by improv-
    ing the **data** memory references and instruction...
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